AIR COMMAND AND STAFF COLLEGE

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A Case Study on Human Capital Mismanagement in the United States Air Force

By

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A Research Paper Submitted to the Faculty

In Partial Fulfillment of the Graduation Requirements for the Degree of

MASTER OF OPERATIONAL ARTS AND SCIENCES

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Maxwell Air Force Base, Alabama

08 May 2016

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Abstract

Today's United States Air Force does not effectively manage its human capital to develop and retain a technically literate acquisitions workforce. A detailed look at the personnel development and career progression opportunities of the acquisitions workforce, especially the Flight Test Engineer community, illustrates this problem. Data presented illustrate the shift towards the Acquisition Management and away from Scientist and Engineer career fields as rank increases. Conversely, Flight Test Engineers are discouraged from branching into Acquisition Management despite the institutional bias in that direction. Several solutions are suggested to improve the human capital management and increase the quality and relevancy of the acquisitions community at large. These solutions range from reducing the emphasis on Air Force Specialty Code when selecting Materiel Leaders to developing a warrior ethos focused on growing warfighter capabilities within acquisition professionals. The challenges facing the United States Air Force, in this era of massive recapitalization of its aged and overworked fleet, require a technically literate and dedicated acquisitions community to provide capabilities for the warfighter in 2036 and beyond.

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Introduction

Today's United States Air Force (USAF) does not effectively manage its human capital.[1] A detailed look at the personnel development and career progression opportunities of the acquisitions workforce, especially the Flight Test Engineer (FTE) community, illustrates this problem. The mismanagement of human capital in the acquisitions community is having far reaching effects on morale and retention which adversely affects the development and procurement of weapon systems. In an era of massive recapitalization, to replace the USAF's overworked and aged fleet, the need for a technically competent and dedicated acquisitions workforce is vital to deliver effective capabilities to the warfighter. Presently, the management of the acquisitions workforce is characterized by selection of leaders based on Air Force Specialty Code (AFSC) rather than technical and leadership competencies. Furthermore, the USAF is failing to develop young acquisition professionals with an ethos of Airmen developing warfighting capabilities for Airmen. The USAF must change the manner that it develops and manages human capital, particularly in the acquisitions community, to better face the challenges of the next two decades and beyond.

Analysis of Acquisitions Community Structure and Leadership Opportunities

To orient the issue, one needs to first understand the acquisitions community. Scientists (61Xs) and Engineers (62Es) are individuals that have a technical degree in basic sciences or engineering fields such as Chemistry, Physics, Mechanical Engineering or Electrical Engineering. A sub-group of 61Xs and 62Es are those that are selected to attend and graduated from Test Pilot Schools (TPS). After completing the yearlong FTE education program at an investment of approximately $1 million per student, these individuals are designated as FTEs (62E3Fs).[2] In the case of 61Xs, they are re-cored as 62E3Fs. The final category for this analysis encompasses the

Acquisition Managers (63A).[3] These individuals do not necessarily hold technical degrees, but are charged with managing cost, schedule and performance dimensions of USAF acquisition programs. 61Xs and 62Es may fill 63A billets, but 63As usually may not fill 61Xs and 62Es due to technical requirements.[4]

A closer look at the USAF's manning of the acquisitions workforce informs the USAF's priorities with respect to pay grade. A Fiscal Year 2015 (FY15) manning report states that the USAF employed 881 core-61X and 62E lieutenants. Of this group, 14 first lieutenants served in non-core billets (10 as 63As). In the same report, there were 293 core Acquisition Manager lieutenants (i.e. 63As), with six serving in 62E billets. This represents a ratio of three technical acquisition professionals per one acquisition manager at the rank of first and second lieutenant.[5] In the same FY15 report, lieutenant colonels with a core career field of 61X or 62E numbered 426 with 161 serving in non-core billets (127 serving in 63A positions). There were 339 core-63A lieutenant colonels, with just 12 serving in non-core billets.[6] The ratio of scientists and engineers per acquisition manager dropped to 1.3 at the pay grade of O-5. For FY15, there were 48 percent fewer core-61X and 62E lieutenant colonels than lieutenant scientists and engineers while the number of core-63A lieutenant colonels was 16 percent greater than for lieutenant acquisition managers. Clearly, these numbers indicates that career progression lies in the cross-training into acquisitions management as an officer advances in rank within the acquisitions community. This is not necessarily a negative trend if the USAF determines it requires more 63As than scientists and engineers at the upper echelons. (See Appendix B: Figure B-1 and B-2)

A historical look at lieutenant core AFSCs in Fiscal Year 2000 (FY00) compared to lieutenant colonel core AFSCs in FY15 show similar results. This is an approximation at an apples to apples comparison of manning progression since, on average, lieutenants from FY00 would be

filling lieutenant colonel billets in FY15. This data will inform the general trend in the manning of the acquisitions workforce over the last 15 years as a function of promotion. In a FY00, the number of core-61S and 62E lieutenants was 917. Of this group, 8 lieutenants served in non-core billets (4 first lieutenants as 63As). There were 476 core-63A lieutenants in FY00 with 10 serving in 61S or 62E positions.[7] Comparing to the data previously shown from FY15, one recognizes that the number of scientists and engineers from this group decreased by 53 percent with increasing rank further supporting the claim that the scientist and engineer career fields are institutionally restricted by grade.[8] Interestingly, there were nearly 62 percent more lieutenant 63As in FY00 as there were in FY15, but the FY00 63A population was only reduced by 28 percent with increasing grade to FY15. This decrease can largely be attributed to normal promotion rates and decreased force size. One can infer from these data, in light of the smaller pool of lieutenant 63As, that the cross-flow of technical acquisition professionals into the 63A career field will continue into the future in order to fulfill the 63A requirements at higher grades.

Unfortunately, this reality results in second order effects that negatively affect the manning of the FTE community. A former Squadron Commander of the F-16 Flight Test Squadron (FLTS) said that the greatest limiting factor to the amount of test programs he could effectively execute was the number of FTEs he had to manage the projects. Another former FLTS/CC opined FTEs are among the scarcest resources in AFMC.[9] Further, a 2015 Air Force Test Center Commander (AFTC/CC) road-show briefing summarizing the management of test personnel claimed that FTE manning issues were a result of too many FTEs serving in non-FTE billets. The data showed that 32 percent of the O-2 to O-5 FTE community (67 individuals) were serving in non-FTE billets. The message from the AFTC/CC was that TPS was an investment in the individual to be a test expert, and that those individuals need to remain in test assignments. The assertion by the

AFTC/CC failed to appreciate the useful transfer of test skills to other acquisition positions benefiting the whole acquisition community. Moreover, the presented data failed to acknowledge that of the 67 62E3Fs serving outside of test positions, 63% were serving in Acquisition Management (i.e. 63A) positions consistent with the broader career field progression guidance. Furthermore, over half of the individuals serving in 63A positions were lieutenant colonels and six of them were serving in Materiel Leader (ML) positions, clearly in-line with the USAF manning and leadership progression goals.[10] The briefing verified the human capital mismanagement claim by conveying a tribal focus on test while failing to comprehend the return on investment realized in the greater acquisition community when FTEs are enabled to pursue leadership opportunities outside of flight test.

Further evidence of the institutional bias against 62E3Fs is seen in leadership opportunities. There are two paths to traditional leadership positions, as defined by the USAF, in the acquisitions community. The first path is via Squadron Command. There are eight test and flight test squadrons that an FTE may command with approximately four vacancies each year.[11] Additionally, there are two squadrons at the National Air and Space Intelligence Center that a 62E may command.[12] Finally, there are roughly 20 squadrons for individuals with program management experience (i.e. 63A) mostly in the Defense Contract Management Agency.[13]

The second path to leadership is through the Materiel Leader (ML) track. Materiel Leaders are designated as squadron command equivalent positions and recognized as leaders in the acquisitions community. These ML positions are considered the "mainstream" leadership opportunities for acquisitions officers. USAF wide there are roughly 110 ML positions with approximately 95 percent dedicated to Program Management (63S0). In AFMC, there are 71 63S0 ML positions rotating every three to four years compared with two 62S0 ML positions. In FY15,

there were 793 lieutenant colonels serving in acquisition billets with 91 63S0s and three 62S0s.[14] It is clear from both the USAF manning considerations and the available leadership positions, the USAF is structured with the intent that 61X and 62E officers transition to the acquisition management career field (63A) as rank increases.[15]

In order to be eligible for ML (63S0) or C63 squadron command there are statutory requirements that must be satisfied. Applicants must have achieved Program Management Level II (PM LVL II) certification from the Acquisition Professional Developmental Program.[16] In order to achieve PM LVL II, one needs to have served in a Program Management position (63A3) with "cost, schedule, and performance" responsibilities for a period of not less than 24 months, and completed a number of Defense Acquisition University (DAU) classes.[17] Some DAU classes are in such high demand that one cannot enroll unless one is already in a 63A3 coded billet; as a result, one cannot achieve the required APDP certification to be eligible for ML unless one has at least 2 years in a 63A3 billet. Due to the rule that FTEs must serve two consecutive test assignments following TPS, they are restricted from achieving PM LVL II until, on average, their second year of eligibility at approximately 16 years of service.[18] If a 62E3F has not served in a 63A coded billet for two years prior to attending TPS, then they may likely spend the first year or two of their ML window simply waiting to be ML-eligible. This would effectively shorten their ML eligibility from five to as few as three opportunities.[19]

There are a small number of ML positions that are technical in nature and are geared toward 62Es (i.e. 62S0). In order to be eligible for a 62S0 position, one needs to have achieved Test and Evaluation Level II (T&E LVL II) or Engineering Level II (ENG LVL II).[20] For the general engineering community T&E LVL II can be as difficult to achieve as PM LVL II is for FTEs, but virtually all FTEs achieve T&E LVL II within one year of graduating from TPS. All members of

the technical acquisitions community should have achieved ENG LVL II by the time they are first lieutenants.[21]

In terms of leadership position matching results, the 61/62/63 Materiel Leader and Squadron Command (MLSCC) Out-Brief from August 2015 showed a stark difference in the potential for advancement across the career fields. For the Calendar Year 2016 (CY16) MLSCC selection board, there were 46 requirements that needed to be filled with 42 of them designated 63 ML or Sq/CC (63S or C63), three were 62 ML or Sq/CC positions (62S or C62) and one was an Air Force Recruiting and Training Squadron position. The board intended to select twice as many candidates as vacancies, nominally 92 selects. There were 227 eligible applicants for the 63S/C63 jobs of which 76 were selected as candidates at a rate of over 33% with a true matching rate of 18.5%. Of those 227 applicants, 89 were core-61Xs and 62Es, while 135 were core-63As with three rated applicants.[22] There were 151 eligible applicants for the 62S/C62 jobs of which six were selected as candidates at a rate of less than 4% with true matching rate of 2%. Of those 151 applicants, 117 were core-61Xs and 62Es, while 31 were core-63As with 3 rated applicants.[23]

This does not take into consideration, however, the test squadron and flight test squadron availability. In order to be eligible for these eight positions, one must have T&E LVL II. Most applicants are 62E3F (61X and 62E TPS graduates). There were 97 FTE graduates from Classes 09B to 15A of 330 applicants, at a rate of 29%. As such this population has already been filtered by virtue of a competitive selection process to TPS. In the Test Eagle Squadron Commander Selection Board for transition in calendar year 2016, there were 29 applicants with just eight selected as candidates to fill four vacancies. Even with respect to the smaller pool with specialized training, the probability of being a Squadron Commander Select and matched to a squadron are lower than that for ML, 27.6% and 13.8% respectively.[24]

Finally, the trend in lieutenant colonel FTE positions in test units is shifting towards the requirement for TPS Graduates (i.e. 62E3F). In 2000, lieutenant colonel engineer authorizations in test units totaled thirteen with a sub-set of FTEs numbering six; a ratio of 6:7 62E3Fs to 62Es. By 2015, that ratio had shifted to be 10:1 lieutenant colonel 62E3F per 62E, meanwhile the total number of 62E authorizations rose from thirteen to twenty-two. This indicates that the trend over the previous 15 years is for a traditional 62E to migrate out of test by the rank of lieutenant colonel while FTEs are being constrained in test; despite the fact that leadership progression opportunities have not increased proportionally. (See Appendix B: Figure B-3)

The opposite trend is evidenced in the lieutenant category over the same time period. In 2000, the ratio of lieutenant 62E3Fs to 62Es in test units was 1:7; whereas in 2015 the ratio had jumped to 1:37. This shows that more lieutenants are being direct-assessed into test units and then transitioning away from test as they progress in rank, but the TPS-graduate FTEs are predominantly retained within test units through lieutenant colonel because of the investment made in them at TPS. Further, many of those lieutenants that are direct-assessed to the test community are being advised NOT to apply to TPS, because they are not likely to get acquisition broadening experience in program offices or laboratories during the first 12 years of their career.[25]

These data show that 62E3F FTEs are stifled in career growth and potential. It is not unreasonable to expect the USAF to retain their FTEs in test based on the training and investment. It is unfortunate, however, that FTEs are restricted in their opportunity for career progression and leadership. Still, the FTE supply has remained relatively constant while the demand for them in test positions has increased without sufficient increase in leadership opportunities.[26] The problem worsens at the O-6 level where there are currently three O-6 62E3F positions in the test community. If FTEs are retained in test through the rank of O-5 without PM experience, with

minimal leadership opportunities, and extremely few O-6 positions, then that pool of talent tends to leave the USAF. As a result of the leadership selection process, the senior leaders in the acquisitions community tend to lack relevant test experience and technical literacy, which can have negative consequences on acquisitions program administration.

Recommendations for Improving the Acquisitions Community

Over the next twenty years it is imperative that the USAF takes steps to develop and retain its technical workforce to ensure senior leaders have the technical competence and leadership qualities to effectively manage the research, development, and procurement of our future warfighting capabilities. By the year 2036, the USAF acquisitions community must have a capable force of technical professionals with commensurate leadership abilities to lead the people and manage the programs for our future force. Further, it is imperative that the career progression and mentorship of the junior force enables the development of dedicated professionals that have the skills and expertise to lead in the future to manage the major recapitalization effort.

One of the most important aspects of the future force will be the emphasis of leadership and expertise divested of strict adherence to AFSC. Training and experience are major factors in developing the workforce to provide the necessary training for future positions, but it is important to recognize that some 63A jobs might have a heavy test component, while some 62E jobs have a heavy program management component, for example. The most important aspect is the quality and skills of the individual rather than a blind adherence to billet numbers and DAU certifications.

Major acquisition programs are increasingly complex and the leaders of those organizations cannot continue to artificially eliminate talent based on constraints levied by an archaic manning system. The USAF must begin to emphasize the Leader in Materiel Leader to a greater degree than they emphasize the Manager in Program Manager. Further, there needs to be

greater leniency when it comes to what constitutes "cost, schedule, and performance" time, enabling assignments spent in test organizations to gain more value. An individual who has spent their entire career in laboratories, program offices, and staff positions has the potential, through the institutionally mandated development process, to miss the fundamental purpose of acquisitions: delivering capability to the warfighter. When acquisition professionals fail to internalize this ethos, they tend to prioritize continued program funding even if it is not in the best interest of the warfighter and national security.[27]

Further, inside the test community, more leadership opportunities are needed for FTEs to incentivize them to stay in the test community, and improve the quality of the test force. In most test organizations, there is a need for a "Director of Test" position. This position should be held by an O-5 FTE with significant test experience. The "Director of Test" should be a highly sought after "B-prefix" position with the responsibility to oversee the entirety of the test programs. The "Director of Test" would become equivalent in prestige and a balance for the Director of Operations in direction of the flight test squadron.[28] In this way, a path to success and responsibility is laid in the test community strengthening the test workforce and rewarding individuals remaining in the test community. Further, this establishes a career progression path wherein an FTE can take command of any Flight Test Squadron, even those that are currently reserved for rated officers.

The emphasis at every level of leadership must be shifted from AFSC towards ensuring the right person is chosen for the job. An important paradigm shift is required wherein the system rewards test expertise and leadership. Currently, roughly half of the test population (i.e. the FTEs) is eliminated from contention for 2/3rds of the available flight test squadron command positions because, by-rule, those jobs are reserved for rated personnel. At the Squadron

Commander/Materiel Leader positions and beyond, greater emphasis must be placed on the leadership qualities of the individuals to ensure the right individuals are charged with the responsibility of command.

This thought process continues, and becomes stronger, as one moves up in rank. The AFTC/CC does not need to be a rated officer, except by current regulation. The AFTC/CC leads several orders of magnitude more engineers than they do rated officers, and are responsible for the institutional leadership and the management of the test programs. The tactical nuances of flying test sorties become less vital to Command as compared to the understanding of test and the leading of people, which may be equally shared by FTEs as it is by rated officers.

Finally, active management of the test personnel is required to ensure that the USAF is getting the greatest benefit from the investment and ensuring individuals do not leave the career field due to poor human capital management and lack of opportunities. One specific measure enabling better management is the creation of a 62F FTE core-AFSC. Currently, rated graduates from TPS are re-designated as 11Es and 12Es, for example, to designate them as test personnel. Rated officers' careers are then actively managed by the Air Force Personnel Center (AFPC) – Operations Staff and Special Duties Assignments Branch, as opposed to the general assignments branch. This is a similar construct to that used for Weapons School Graduates. The purpose of this separate management is to ensure the USAF maximizes the benefit of the training and the individual can maximize their contribution to the USAF following specialized training. No separate office exists for the management of FTEs. Re-coring FTEs as 62Fs and actively managing their careers through a Special Duties Branch will improve the human capital management.[29]

Programs such as the US Special Operations Command's (USSOCOM) Ghost Program are positive steps to improve the relevancy, competence, and legitimacy of acquisition

professionals. In the Ghost Program, acquisition professionals work directly with USSOCOM personnel to deliver capability directly to the operators using the capability in the field.[30] Currently, the closest example of acquisition personnel to operator interface in conventional Air Force acquisitions exists in the test community. In the test community, one works directly with operators who can put a personal face on the purpose of the product, and a reality to why what looks good on paper may not be good in practice. During test, PowerPoint slides and Whitepapers become reality for the first time, and the test professionals are exposed to the intricate balance between performance and schedule that is difficult to conceptualize at the program offices.

An analogous program to the Ghost Program should be developed for the conventional USAF. In this program, junior acquisition professionals would be embedded with operational units for a period of time to gain exposure to the types of concerns and issues the operators have with respect to the systems they operate. Exposing the young acquisitions workforce to these tactical concerns will frame the problems and provide context for the systems they acquire and develop. It is vital that we begin growing our acquisitions workforce from the bottom-up to appreciate, on an intimate level, the operators' concerns. This context will inform better decisions and perspective as the acquisition professionals advance in grade, which will in-turn develop more credibility and expertise in the workforce. This will eventually lead to better acquisition program management and execution as the workforce is developed with greater perspective of operator needs and concerns focusing on delivering capability to the warfighter.

Additionally, acquisition programs intending to deliver warfighting capabilities to the operator should consider test experience as a vital attribute when selecting program leaders. Most test organizations are organized as a combined team of a military members, civilians and contractors. The team is united to develop capabilities for the warfighter. Test personnel gain

insight into the culture and motivations of the combined team, which is extremely valuable when attempting to lead and motivate people that do not necessarily work for the Commander. There is currently no such thing as a "combined program office". In the program management side of the acquisitions process, the government and contractor team seem, too often, to be adversaries, and that is to the detriment of the operator. The cultural context received by test professionals working with the combined test team is invaluable experience when transitioning to program leadership.

A final effort to help develop and improve the acquisitions workforce would be to leverage time spent at Intermediate Developmental Education (IDE) to better prepare the individuals for the programmatic responsibilities they might have post-IDE. One method would be to offer elective classes at Air Command and Staff College (ACSC) specifically tailored to the acquisitions community. These courses might emphasize cost-benefit analysis, or other business management concepts. One relatively straight forward solution would be to offer critical in-residence DAU courses while at ACSC as part of the elective program. Similar agreements could be set up as are currently arranged with the Defense Language Institute professors, wherein DAU professors would be sent to Maxwell AFB to instruct the upper level DAU courses that are considered critical to acquisition professionals. In this way, acquisition professionals are provided an opportunity to attend these in-residence courses without going on Temporary Duty. This takes advantage of an audience that requires the training and education without the cost of missed work.

Conclusion

None of the concepts in this paper are intended to suggest that FTEs are necessarily more qualified to command and lead at any level as compared to rated officers or other acquisition managers. They are intended to assert, however, that FTEs are not inherently less qualified either, as the current system is designed. A path must be laid wherein the entirety of the acquisitions

population, and test community specifically, can contribute to delivering capability to the warfighter and allow the best and brightest leaders, regardless of position or AFSC, to rise to the upper echelons of leadership. The recommendations outlined in this essay, if enacted, will begin to grow a new generation of acquisition professionals and better leverage the talent already in the USAF to effectively deliver capabilities to the warfighter in the future. An analysis of each career field should be pursued to identify other areas where institutional constructs are restricting the development of Airman. Improving the development and management of the USAF's human capital is the most important effort required to meet the challenges in 2036 and beyond.

Appendix A: Average Flight Test Engineer Progression

On average, the United States Air Force Test Pilot School (TPS) produces about 16 FTEs competitively selected from roughly 56 applicants per year.[31] Generally, engineers apply to TPS during their first or second assignment and attend TPS as junior to mid-level Captains. In 2014, the average FTE applicant had 64 months of Total Active Federal Commissioned Service (TAFCS).[32] The FTE applicant typically would have spent the beginning part of their career in laboratory assignments or program offices gaining some acquisition broadening experience. The career progression and development issues are particularly acute if the FTE applicant was direct assessed into the test community, because they have no acquisitions broadening.

There are two TPS classes per year. The first class begins roughly six months after the applicants are notified of their admission to TPS, with the second class beginning a year after notification. As a result, FTEs graduate TPS 18 to 24 months after their application was accepted (i.e. 82-88 months or about 7 years TAFCS). By rule, an FTE must serve two consecutive test assignments to pay back for the investment.[33] Estimating three years per assignment, the FTE has roughly 13 years of active duty service with effectively no program management (PM) time, and certainly no applicable PM time in the last seven years as stipulated as a requirement for Program Manager Materiel Leader Positions. If the individual then attends Intermediate Developmental Education, they are now at 14 years with no PM time and well behind their peers in the acquisitions community that did not attend TPS. At this point in their career, if the individual is fortunate enough to get a 63A job they will still need 24 months in the position prior to even being eligible for ML. If the individual is returned to test to fill a 62E3F positon or is designated for tertiary assignment such as Political-Military Affairs Strategist (16P), they have been statutorily eliminated from consideration for 95 percent of the ML and Sq/CC positions.[34]

Appendix B: Graphical Representation

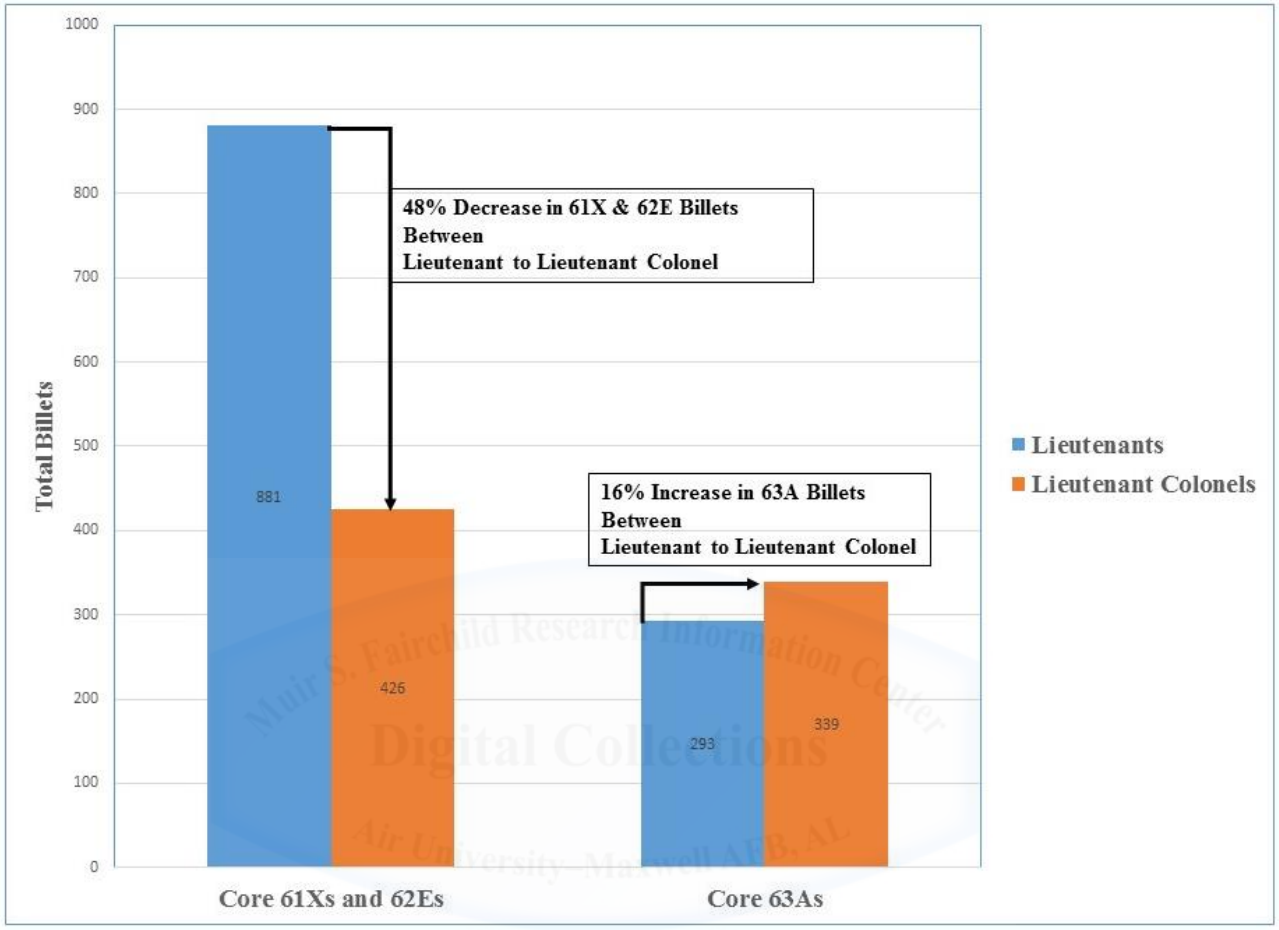

Figure B-1: 2015 Report on Billet Numbers by AFSC and Grade

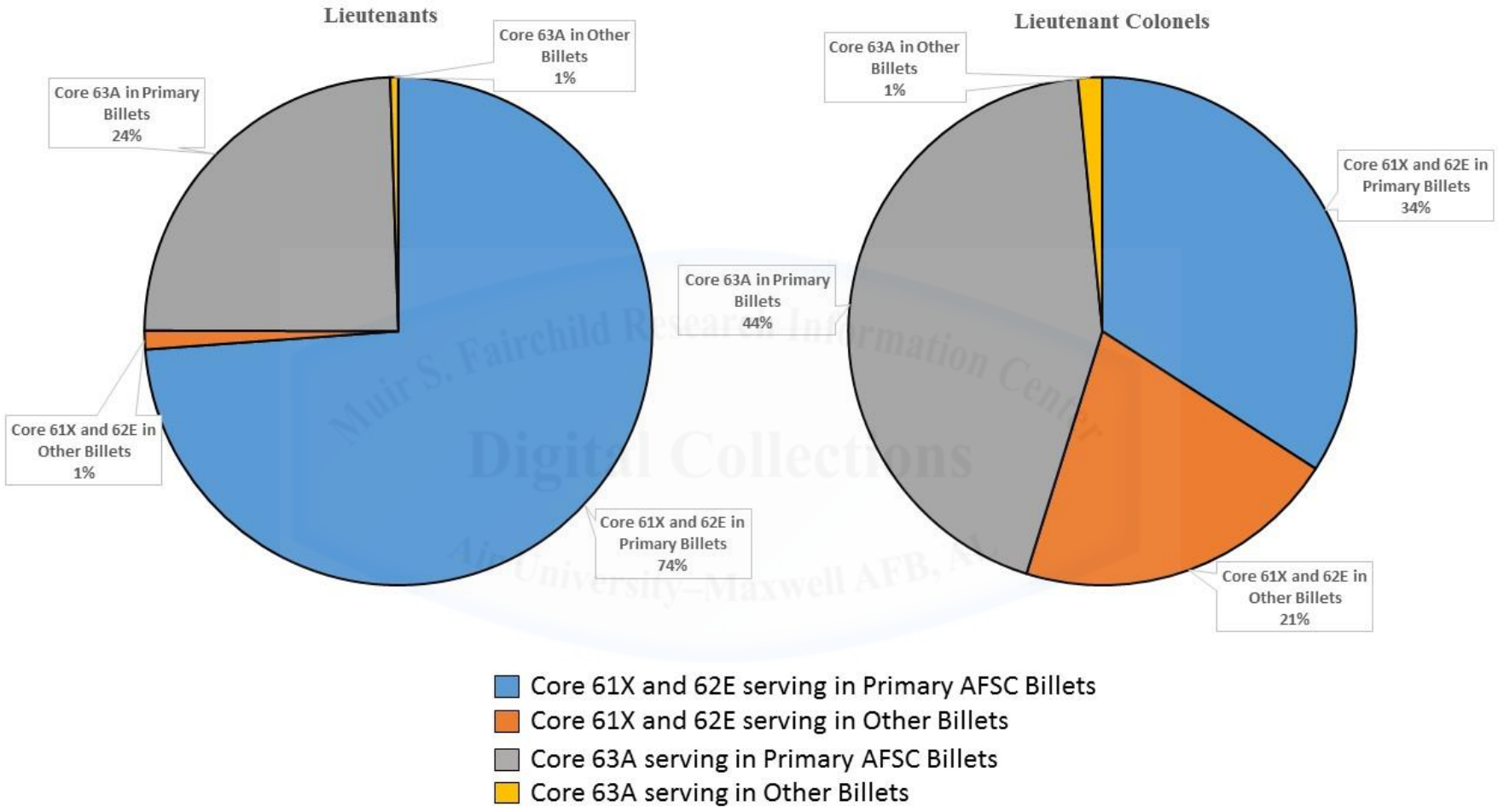

Figure B-2: 2015 Report on AFSC Distribution by Grade

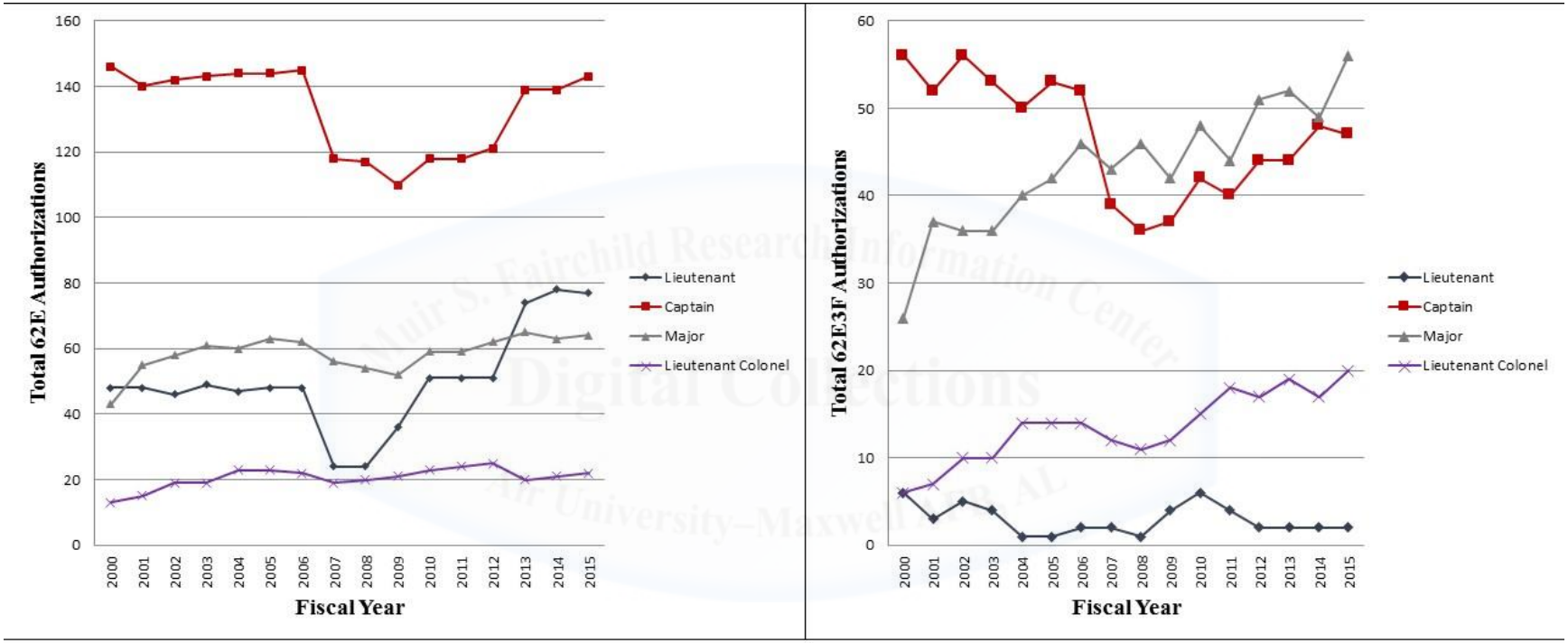

Figure B-3: Billet Authorizations in Test Units from FY2000 to FY2015

End Notes

1 I wish to thank the members of Flight 2 for their thoughtful comments and conversation regarding this topic. I would specifically like to thank Lt. Col. R. Ungerman, USAF, Lt. Col. D. Heesch, USAF, Maj. J. Loken, ANG, Maj. S. McIntyre, USAF, Maj. C. McNiel, USAF, Maj. T. Megow-Jones, USMC, and Maj. J. Schneider, USAF. All errors found herein are my own.

2 The vast majority of USAF FTEs attend the United States Test Pilot School at Edwards AFB, CA. Some USAF FTEs attend the Navy TPS program, while others attend partner nation programs such as the French or British Test Pilot Schools. Although not a rigid requirement, the vast majority of applicants accepted into the FTE training program have completed a technical graduate degree, usually funded by the USAF.

3 U.S. Air Force, "Officer AFSC Classifications", accessed 27 February 2012, http://www.af.mil/AboutUs/FactSheets/Display/tabid/224/Article/104484/officer-afsc-classifications.aspx; 61X represents the following: Operations Research Analyst (61A), Behavioral Science/Human Scientist (61B), Chemist (61C), Physicist/Nuclear Engineer (61D), and Scientist (61SX). 62E represents all Developmental Engineers. 62Es are managed as a group, but are functionally subdivided as Aeronautical (62E1A), Astronautical (62E1B), Computer Systems (62E1C), Electrical (62E1E), Flight Test (62E3F), Project (62E1G), and Mechanical (62E1H). The fourth digit represents the level of expertise. Headquarters Air Force Personnel Center, *Air Force Officer Classification Directory*, 31 October 2015, 219, https://gum-crm.csd.disa.mil/ci/fattach/get/5189633/1451923927/redirect/1/filename/AFOCD-Oct%2015%20AO%202%20JAN%2016.pdf. USAF/TPS Administrator response to data inquiry e-mail, subject: cost inquiry, 26 February 2016 and 2 March 2016.

4 Department of the Air Force, *Acquisition Managers (63AX & 1101): Career Field Education and Training* Plan, 01 August 2012, 29, http://static.e-publishing.af.mil/production/1/saf_aq/publication/cfetp63ax-1101/cfetp63ax-1101.pdf. Of note, a similar 62E or 61X Career Field Education and Training Plan could not be found.

5 Air Force Personnel Center, Interactive Demographic Analysis System (IDEAS), Key Parameters GRADE, CORE, 3 Digit DUTY AFSC for Fiscal Year 2015 and sorted by 61AX, 61BX, 61CX, 61DX, 62EX, 62SX, 62SX, 63AX, 63GX, 63SX, accessed on 20 February 2016, http://access.afpc.af.mil/vbinDMZ/broker.exe?_program=ideaspub.IDEAS_Default.sas&_service=pZ1pub1&_debug=0. The other 4 first lieutenant scientists or engineers not serving in their core-AFSC were flowed into another technical field. For instance, a 61B might have served as a 61A.

6 Ibid.

7 Air Force Personnel Center, Interactive Demographic Analysis System (IDEAS), Key Parameters GRADE, CORE ID, 2 Digit DUTY AFSC for Fiscal Year 2000, accessed on 13 May 2016. The database has less resolution for FY00 presumably due to a restructuring of the career field, and only could report a 2 Digit AFSC with a break-out of 61SX, 62EX, and 63AX. The comparison is still valid, however, since the refined break-down from the FY15 data were added together to provide the equivalent 61X, 62E, and 63A combined numbers. http://access.afpc.af.mil/vbinDMZ/broker.exe?_program=ideaspub.IDEAS_Step1.sas&_service=pZ1pub1&_debug=0. As in FY15, the remaining 4 scientists and engineers not serving in their core-AFSC served in other technical positions (i.e. all 4 were 62Es serving as a 61S).

8 Comparing the 426 lieutenant colonel 61X and 62E billets in FY15 to the 917 lieutenant 61SX and 62E billets in FY00 yields the 53% reduction.

9 Interview by Author, 17 February 2016. Former FLTS/CC response to survey e-mail, subject: Very Non-Scientific Survey Question, 26 February 2016.

10 Air Force Test Center Commander (AFTC/CC), "Management of TPS Graduates" (briefing, TPS Graduate Road Show, May 2015), slide 7, 14. The data presented in this essay is as accurate as possible. The data in the presentation had some inconsistencies that were unresolvable based on the fact the source data was unavailable.

11 AFMC/A3O response to data inquiry e-mail, subject: Test Eagle Squadron Command Positions, 22 February 2016.

12 AFMC/A1L response to data inquiry e-mail, subject: Test Eagle Squadron Command Positions, 27 February 2016.

13 SAF/AQ response to data inquiry e-mail, subject: Test Eagle Squadron Command Positions, 29 February 2016.

14 Air Force Personnel Center, IDEAS, Key Parameters GRADE, CORE, DUTY AFSC for Fiscal Year 2015, accessed on 20 February 2016, http://access.afpc.af.mil/vbinDMZ/broker.exe?_program =ideaspub.IDEAS_Default.sas&_service=pZ1pub1&_debug=0.

15 Alternatively, this data could indicate the promotion rates internal to the 63A community dramatically outpaces that internal to the 61X or 62E communities. Further research would be necessary to validate this claim, but the anecdotal evidence is clear that the majority of leadership positions, and thus opportunity for promotion, reside in the 63A community. This highlights the desire for 61Xs and 62Es to transition to 63A.

16 Headquarters US Air Force, "61/62/63 Materiel Leader and Squadron Commander Outbrief" (briefing, August 2015), slide 8. This requirement has its source in the Defense Acquisition Workforce Improvement Act.

17 Defense Acquisition University, "Certification Standards & Core Plus Development Guide: Program Management Level II", accessed 21 February 2016, http://icatalog.dau.mil/onlinecatalog/CareerLvl.aspx?lvl=2&cfld=9.

18 The "rule" of two consecutive test assignments is really a "rule of thumb." Strictly speaking, there is no regulation or directive that requires a TPS graduate to serve two consecutive test assignments, but the guidance given to the Air Force Personnel Center 62E functional has been to ensure 62E3Fs are utilized in test to the maximum extent possible. According to the PSDM 16-34 announcing the TPS selection board: "Selects will incur a 3-year ADSC associated with selection to Test Pilot School in AFI 36-2107, Active Duty Service Commitments (ADSC), Table 1.1 Rule 16 and Rule 19 (for graduates of USAF TPS only). Graduates will be assigned to a flight test vacancy as an active test flyer in DT&E, or another position that uses the education and training. Air Force requirements determine future assignments after the initial Directed Duty Assignment (DDA)." Additionally, AFI 99-107 17 Jan 2013 states in paragraph 7.2 "Air Force requirements determine future assignments after the initial DDA." It is based on this direction that the "rule-of-thumb" has more or less been formalized and only on rare occasions are FTE-graduates assigned to less than two consecutive test assignments post-TPS.

19 Further research should be accomplished to find hard evidence of this observation. This observation is postulated based on the typical job progression diagram outlined in Appendix A and personal experience/observation, but the raw data should be available at AFPC. The Career

Field Managers should pull this data and assess the development and potential of the career field based on this fact. The thought experiment in Appendix A was performed using data from sources cited, but also nearly identically matches the career progression of the author. A request was sent to the Air Force Personnel Center to assess the timing that individuals gain PM LVL II broken out by AFSC. This request was denied.

20 Headquarters US Air Force, "61/62/63 Materiel Leader and Squadron Commander Outbrief" (briefing, August 2015), slide 8.

21 Defense Acquisition University, "Certification Standards & Core Plus Development Guide: Test and Evaluation Level II", accessed 22 February 2016, http://icatalog.dau.mil/onlinecatalog/CareerLvl.aspx?lvl=2&cfld=13; Defense Acquisition University, "Certification Standards & Core Plus Development Guide: Engineering Level II", accessed 22 February 2016, http://icatalog.dau.mil/onlinecatalog/CareerLvl.aspx?lvl=2&cfld=12.

22 A break-down of the selects by AFSC was not found.

23 Headquarters US Air Force, "61/62/63 Materiel Leader and Squadron Commander Outbrief" (briefing, August 2015), slide 11-13. Trend analysis for leadership selection in other AFSCs would be interesting to see if these rates are in or out of family with other career fields.

24 USAF/TPS Administrator response to data inquiry e-mail: subject: Number of FTEs per Class, 22 February 2016 & 25 February 2016; AFMC/A3O response to data inquiry e-mail, subject: Test Eagle Squadron Command Positions, 23 February 2016. This Test Eagle Squadron Commander Selection Board was the board held in the summer 2015 to select candidates to be match to squadron command positions in 2016. The Test Eagle board selects candidates to command flight test squadrons.

25 The lack of acquisition broadening experience exacerbates the problem highlighted in Appendix A.

26 Editorial – In the opinion of the author, test is an extremely rewarding job wherein major contributions to national defense can be made that will have long-term effects. That said, given the institutional bias as presented in this paper, the pull out of test is nearly required to remain relevant in the broader USAF. This is the extremely unfortunate.

27 Kouzes, James M., and Barry Z. Posner, *The Leadership Challenge: How to Make Extraordinary Things Happen in Organizations*, 5th ed. (San Francisco: Jossey-Bass, 2012), 14-17, 37.

28 Currently, most organizations do not have a formalized "Director of Test" position for a military member. The individuals performing the function are generally civilian or contractors with titles such as "Chief Engineer" or "Test Manager". Pushing those responsibilities to a FTE "Director of Test" would add more operational legitimacy to the position and provide a career progression path for military engineers.

29 The AFTC/CC created a Graduate Management Council (GMC) in roughly 2014 to help AFTC with the development and management of its personnel. Currently, however, this council is not a Development Team (DT), and has no legitimate authority in the management of personnel outside of AFTC. Raising the GMC to the level of a DT might have very positive results in effectively managing the workforce.

30 Yasmin Tadjdeh, "Special Operations Commander Bypasses Acquisitions Red Tape," *National Defense Magazine,* January 2015, accessed 27 February 2015,

http://www.nationaldefensemagazine.org/archive/2015/January/Pages/SpecialOperationsCommandBypassesAcquisitionRedTape.aspx.

31 USAF/TPS Administrator response to data inquiry e-mail: subject: Number of FTEs per Class, 22 February 2016. Roughly 16 FTE graduates is the average active duty USAF FTE graduate. Further, the 56 applicants encompass active duty USAF applicants only. These numbers do not take into account civilian applicants and graduates. Typically, one civilian FTE graduates per year.

32 Management of TPS Graduates Briefing, 2015, Slide 18, 20.

33 See End Note #18.

34 There is a waiver process that one's senior rater may submit should the applicant not meet the APDP requirements. It is unknown the success rate of those waiver requests. Generally speaking, the waivers are for highly unusual circumstances that made it impossible for the individual to meet the APDP criteria. Since there are enough 63As that meet the PM LVL II criteria, and it is not unusual for 62E3Fs to have trouble making the criteria, it is unlikely that the waiver would be accepted.